

1 What is claimed:

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3 1. A printer system comprising a printer and an ink supply, the
4 printer arranged to print a location pattern comprising a plurality of
5 dots adapted to be read by a pattern reader, the system being further
6 arranged to modify one or more characteristics of the dots
7 substantially in dependence upon the quantity of ink in the supply.

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9 2. A system according to claim 1, arranged to modify the size of
10 the dots.

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12 3. A system according to claim 1, arranged to modify the shape of
13 the dots.

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15 4. A system according to claim 1, arranged to print dots having a
16 first set of characteristics when the quantity of ink is determined to
17 be above a predetermined threshold and to print dots having a
18 second set of characteristics when the quantity of ink is determined
19 to be below the predetermined threshold.

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21 5. A system according to claim 4, wherein the dots printed with
22 the second set of characteristics are larger than the dots printed with
23 the first set of characteristics.

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25 6. A system according to claim 5, wherein the dots printed with
26 the first and second sets of characteristics have substantially the
27 same shape.

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29 7. A system according to claim 5, wherein the dots printed with
30 the first and second sets of characteristics have different shapes.

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1 8. A system according to claim 7, wherein the dots having the
2 first set of characteristics are substantially "L" shaped.

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4 9. A system according to claim 7, wherein the dots having the
5 second set of characteristics are substantially "T" shaped.

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7 10. A system according to claim 4, arranged to detect three or
8 more ranges in the quantity of ink in the supply and is further
9 arranged to print dots having a corresponding set of characteristics
10 at each of the ranges.

11

12 11. A system according to claim 1, wherein each of the plurality of
13 dots has a nominal position offset in one of a plurality of directions,
14 such as above, below, to the left and to the right, from the
15 intersection point of a virtual grid.

16

17 12. A system according to claim 1, wherein the modification of the
18 one or more characteristics of the dots substantially does not alter
19 the nominal position of each dot.

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21 13. A system according to claim 1, wherein the printer is a digital
22 printer.

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24 14. A system according to claim 13, wherein the printer is an inkjet
25 printer, a LED printer, a LCD printers, or a liquid electrophotographic
26 printers.

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28 15. A system according to claim 13 or claim 14, wherein the printer
29 also functions as a photocopier.

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1 16. A system according to claim 13, wherein the printer has a
2 resolution of approximately 600dpi.

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4 17. A system according to claim 1, wherein the dots are printed in
5 IR absorbing ink.

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7 18. A system according to claim 1, adapted to print the location
8 pattern without human-discernible content.

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10 19. A system according to claim 1, adapted to print the location
11 pattern and human-discernible content on the same carrier.

12

13 20. A method of generating a location pattern comprising a
14 plurality of dots, comprising the steps of:

15 receiving data relating to the degree of deterioration or wear
16 associated with one or more elements of an ink supply; and,

17 selecting characteristics of the pattern dots in dependence
18 upon the received data.

19

20 21. A method according to claim 20, further comprising the step of
21 requesting pattern information from a pattern database.

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23 22. A method according to claim 20, further comprising the step of
24 generating a print file comprising pattern area having dots with the
25 selected characteristics.

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27 23. A method according to claim 22, further comprising the step of
28 printing the print file on a printer associated with the ink supply.

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30 24. A method according to claim 22, wherein the data corresponds
31 to the quantity of ink in the supply.

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2 25. A computer program or a printer driver comprising program
3 code means for performing the method steps of any one of claims 20
4 to 24 when the program is run on a computer and/or other processing
5 means associated with suitable apparatus.

6

7 26. A printer system comprising a printer and an ink supply, the
8 printer arranged to print a location pattern comprising a plurality of
9 dots adapted to be read by a pattern reader, the system being further
10 arranged monitor a variable associated with the printing process and
11 to modify the size of the dots in dependence upon the monitored
12 variable.

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14 27. A system according to claim 26, wherein the monitored
15 variable is the ambient temperature or humidity.

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17 28. A printer system comprising a printer and an ink supply, the
18 printer arranged to print a location pattern comprising a plurality of
19 dots adapted to be read by a pattern reader, the system being further
20 arranged to modify one or more characteristics of the dots
21 substantially in dependence upon a variable associated with the ink
22 supply.

23

24 29. A system according to claim 28, wherein the variable provides
25 an indication of the current level of deterioration of the ink supply or
26 wear associated with one or more elements of the ink supply.

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28 30. A system according to claim 29, wherein the variable provides
29 an indication of the cumulative degree of use of the ink supply.

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1 31. A system according to claim 29, wherein the variable is the
2 quantity of ink in the supply.

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4 32. A location pattern system comprising a printer adapted to print
5 location patterns made up of a plurality of dots and a pattern reader
6 adapted to detect the printed dots, the system being adapted to print
7 patterns having a dot size dependent upon a variable associated with
8 an associated ink supply at substantially the time of printing, such
9 that the dot detection response of the pattern reader is maintained
10 substantially constant between patterns printed when the ink supply
11 contained substantially different levels of ink.